

IN THE SPECIFICATION:

Please replace the paragraphs [0014], [0015], [0017]-[0022], [0029] and [0030] of the subject application as published (specifically, U.S. Publ. Pat. Appl. No. 2008/0021125) with the following paragraphs:

[0014] The addition-curable type liquid silicone rubber composition comprising (A) [(a)](a-1) a liquid diorganopolysiloxane having at least two alkenyl groups per molecule, [(b)](a-2) an organopolysiloxane having at least two silicon^{[[e]]} bonded hydrogen atoms per molecule, and [(c)](a-3) a platinum catalyst, which is used as a silicone rubber sponge emulsion composition, is liquid at normal temperatures and is converted to a rubbery state through the crosslinking and curing of component [(a)](a-1) and component [(b)](a-2) by the addition of the silicon-bonded hydrogen atoms of component [(b)](a-2) to the silicon-bonded alkenyl groups of component [(a)](a-1) under the catalytic action of component [(c)](a-3).

[0015] The alkenyl groups in the liquid diorganopolysiloxane having at least two alkenyl groups per molecule [(a)](a-1) are exemplified by vinyl, allyl, propenyl, and hexyl groups, with vinyl groups being preferable from the standpoint of manufacturing simplicity. Organic groups other than alkenyl are exemplified by methyl; ethyl, propyl, hexyl, and other alkyl groups; phenyl, tolyl, and other aryl groups; 3,3,3-trifluoropropyl, 3-chloropropyl, and other halogenated alkyl groups, with methyl being preferable from the standpoint of manufacturing simplicity. The molecular structure of this component may be either a linear structure or a linear structure containing branches. There are no particular limitations concerning the molecular weight of this component as long as the component is liquid at normal temperatures, and its viscosity at 25 °C is preferably not less than 100 mPas and not more than 100,000 mPas.

[0017] Furthermore, the organopolysiloxane having at least two silicon-bonded hydrogen atoms per molecule [(b)](a-2) is a cross-linking agent for component [(a)](a-1). Under the catalytic action of component [(c)](a-3), the silicon-bonded hydrogen atoms of this component are added to the

silicon-bonded alkenyl groups in component [(a)](a-1), thereby cross-linking and curing component [(a)](a-1). Although this component has at least two silicon-bonded hydrogen atoms, when there are two silicon-bonded alkenyl groups in component [(a)](a-1), it needs to have not less than three silicon-bonded hydrogen atoms. The silicon-bonded organic groups of component [(b)](a-2) are exemplified by methyl; ethyl, propyl, hexyl, and other alkyl groups; phenyl, tolyl, and other aryl groups; and by 3,3,3-trifluoropropyl, 3-chloropropyl, and other halogenated alkyl groups. The molecular structure of this component may be linear, branched, cyclic, or network-like. There are no particular limitations concerning the degree of polymerization of this component so long as it is not less than 2, and its viscosity at 25 °C is preferably between 3 and 10,000 mPas.

[0018] The compounding ratio of component [(a)](a-1) and component [(b)](a-2) is preferably such that the molar ratio of the silicon-bonded hydrogen atoms of component [(b)](a-2) and the silicon-bonded alkenyl groups of component [(a)](a-1) is preferably (0.5:1) to (20:1) and, even more preferably, (0.8:1) to (5:1). This is due to the fact that superior curability is difficult to obtain when the molar ratio is smaller than 0.5 and the hardness of the cured product becomes excessively high when it is greater than 20.

[0019] The platinum catalyst [(c)](a-3) is a catalyst used for the cross-linking and curing of component [(a)](a-1) through the addition of the silicon-bonded hydrogen atoms of component [(b)](a-2) to the silicon-bonded alkenyl groups of component [(a)](a-1). It is exemplified by platinum micropowder, platinum black, chloroplatinic acid, olefin complexes of chloroplatinic acid, chloroplatinic acid/divinyltetramethyldisiloxane complexes, platinum complexes of divinyltetramethyldisiloxane, chloroplatinic acid/.beta.-diketone complexes, platinum complexes of .beta.-diketone, rhodium compounds, and palladium compounds. Component [(c)](a-3) is used in so-called catalytic amounts, i.e. amounts sufficient for the cross-linking and curing of component [(a)](a-1) through the addition of the silicon-bonded hydrogen atoms of component [(b)](a-2) to the silicon-bonded alkenyl groups of component [(a)](a-1). Specifically, it should be used in an amount of 1 to 1000 ppm by weight, based on platinum metal, relative to component (A).

[0020] To adjust the flowability or improve the mechanical strength of the cured product, the liquid silicone rubber composition may be combined with various fillers. Such fillers are exemplified by fumed silica, precipitated silica, aerogels, and other reinforcing silica fillers; carbon black, colloidal calcium carbonate, fumed titanium dioxide, and other reinforcing fillers; quartz micropowder, diatomaceous earth, aluminosilicic acid powder, magnesium oxide powder, precipitated calcium carbonate, and other semi-reinforcing and non-reinforcing fillers; reinforcing silica fillers hydrophobicized with dimethyldichlorosilane, trimethylchlorosilane, hexamethyldisilazane, octamethylcyclotetrasiloxane, and other organosilicon compounds; and calcium carbonate powder treated with a resin acid or a higher fatty acid. It is especially preferable to pre-mix component [(a)](a-1) with a reinforcing filler [(d)](a-4), in particular, a reinforcing silica filler, in order to make a paste-like mixture and then combine the mixture with the rest of the components. Mixing under heating is preferable when preparing the paste-like mixture, and hydrophobing agents, such as hexamethyldisilazane or dimethylsiloxane blocked by silanol groups, can be added when the components are mixed. The reinforcing filler [(d)](a-4) may be added in an amount of 1 to 60 parts by weight, and, preferably, 5 to 40 parts by weight, per 100 parts by weight of component [(a)](a-1).

[0021] The mixture of component [(a)](a-1) to component [(c)](a-3) tends to undergo addition reactions even at normal temperatures and it is preferable to further combine it with an addition reaction inhibitor in order to prevent cross-linking reactions from taking place during emulsification or during storage of the emulsion. The addition reaction inhibitor is exemplified by acetylene alcohols, ene-yne compounds, benzotriazole, and tetramethyltetravinyldicyclotetrasiloxane. The addition reaction inhibitor should be added to component (A) in an amount that suppresses addition reactions between component [(a)](a-1) and component [(b)](a-2) at normal temperatures and does not inhibit addition reactions under heating. It is usually preferable to add the addition reaction inhibitor in the amount of 0.01 to 5 parts by weight per 100 parts by weight of the total of component [(a)](a-1) to component [(c)](a-3).

Alcohols, pigments, heat resistance agents, flame retarders, plasticizers, antibacterial agents, fungicides, tackifiers, etc. may be further combined with component (A) as needed.

The aqueous solution of a water-soluble polymer (B) provides a solute necessary for emulsifying component (A).

[0022] As long as the water is pure, there are no limitations concerning the type of the water used in component (B), which is a solute necessary for the preparation of the silicone rubber sponge emulsion. It is exemplified by tap water, well water, ion exchange water, and distilled water. The amount of added component (B) is 50 to 250 parts by weight, and more preferably, 70 to 200 parts by weight, per 100 parts by weight of the total of [(a)](a-1), [(b)](a-2), and [(c)](a-3) in component (A). This is due to the fact that component (A) becomes difficult to be emulsified and the expansion ratio of the formed silicone rubber sponge becomes smaller when it is less than 50 parts by weight, and, on the other hand, the strength of the formed silicone rubber sponge is impaired when it exceeds 250 parts by weight. The water-soluble polymer contained in component (B), which may be a viscosity improver or thickening agent conventionally used for emulsions, is added in order to raise the viscosity of component (B) and prepare a stable emulsion using a small amount of emulsifying agent. The content of the water-soluble polymer in component (B) is 0.1 to 5% by weight, and, more preferably, 0.5 to 3% by weight. When its content is lower than 0.1% by weight, the viscosity of the aqueous solution of a water-soluble polymer decreases and it becomes difficult to obtain a stable emulsion, and, on the other hand, when it exceeds 5% by weight, the viscosity is too high and it becomes difficult to degas the emulsion, neither of which is desirable.

[0029] (2) Predetermined amounts of component [(a)](a-1) from component (A), (B) an aqueous solution of a water soluble polymer, and (C) an emulsifying agent are placed in a high-speed stirring mixer and mixed together by stirring for a predetermined time, whereupon predetermined amounts of component [(b)](a-2) and component [(c)](a-3) are added and mixed therewith by stirring.

[0030] (3) Predetermined amounts of component [(a)](a-1) from component (A), and an aqueous

solution of a water soluble polymer and (C) an emulsifying agent are placed in a high-speed stirring mixer and mixed together by stirring for a predetermined time, after which predetermined amounts of component [(b)](a-2) and component [(c)](a-3) are added and mixed therewith by stirring.